

**REMARKS**

Claims 1, 8, 10-12, 14, and 15 are currently being amended. Basis for amendments to the aforementioned claims can be found throughout Applicant's specification, including page 4, lines 8-11, the Examples, as well as based on *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) and MPEP §2163.05 (III).

Additionally, new claims 16-19 are currently being added. Basis for the aforementioned new claims can be found throughout Applicant's specification, including page 3, line 13-23, page 3, line 28 - page 4, line 14, and the Examples.

These amendments do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, the Examiner is respectfully requested to enter the amendments.

**1. Rejection of Claims 1, 2, 4, 8, 10-12, 14, and 15 Under 35**

**U.S.C. §102(b) to EP 0 704 463**

Applicant respectfully traverses the rejection of claims 1, 2, 4, 8, 10-12, 14, and 15 under 35 U.S.C. §102(b) to EP 0 704 463 (herein referred to as, "Ueda, et al.").

As is well-settled, for a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either

expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

With respect to the instant rejection, the current Office Action states on page 3, line 19 - page 4, line 7,

With respect to the rejection of claims 1, 2, 4, 8, 10-12, 14 and 15 under 35 U.S.C. 102(b) as being anticipated by Ueda et al. (EP 0 704 463), the reference clearly shows the first step homopolymerization of propylene at paragraphs [0100] and [0110] as previously pointed out by the Examiner, which state '(i)n the step (a), (i) propylene is homopolymerized,' and '(t)he propylene (co)polymer (which is not a disclosure of only 'copolymer') is particularly preferably a propylene homopolymer,' respectively. Further, the Examiner has pointed to paragraph [0145] for the ethylene copolymer, which step is subsequent to the first step. This passage discloses an ethylene content of 'not less than 90 mol%, preferably 90 to 98 mol%,' which clearly reads on the claimed copolymer of ethylene. Applicants choose to ignore the teachings of the reference.

As noted above by the Examiner, Ueda, et al. discloses in step (e) an ethylene/olefin copolymer is produced, with the ethylene/olefin copolymer containing an ethylene range preferably from 90 to 98 mol%, which correlates to an upper-range of 97% by weight (i.e., 98 mol% of ethylene equals 97% by weight of ethylene). However, Applicant is currently claiming a process for preparing a propylene

polymer composition in an at least two-stage process, and a propylene polymer composition obtained in an at least two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give an ethylene/propylene copolymer comprising more than 97% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min. in accordance with ISO 1133 at 230°C and 2.16 kg. Accordingly, Applicant respectfully requests the instant rejection to claims 1, 2, 4, 8, 10-12, 14, and 15 to be withdrawn.

With respect to new claims 16-19, Applicant is currently claiming a process for preparing a propylene polymer composition in a two-stage process, and a propylene polymer composition obtained in an at least two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give an ethylene/propylene copolymer comprising from 95% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min.

in accordance with ISO 1133 at 230°C and 2.16 kg, and the propylene polymer composition consists essentially of the propylene homopolymer and the ethylene/propylene copolymer.

Additionally, Applicant is currently claiming a polymer composition and a process for preparing the polymer composition comprising: (1) preparing a propylene polymer composition in a two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give an ethylene/propylene copolymer comprising from 95% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min. in accordance with ISO 1133 at 230°C and 2.16 kg; and

(2) subsequently mixing an ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer comprising a crystallinity lower than the ethylene/propylene copolymer formed in the second polymerization stage, wherein the polymer composition consists essentially of the propylene homopolymer, the ethylene/propylene copolymer, and the ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer.

As outlined above, in both circumstances the process and propylene polymer composition consist essentially of either the propylene homopolymer prepared in the first polymerization stage and

the ethylene/propylene copolymer comprising 95% to 99.5% by weight of ethylene prepared in the second polymerization stage, or the process and propylene polymer composition consist essentially of the propylene homopolymer prepared in the first polymerization stage, the ethylene/propylene copolymer comprising 95% to 99.5% by weight of ethylene prepared in the second polymerization stage, and the ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer comprising a crystallinity lower than the ethylene/propylene copolymer formed in the second polymerization stage.

Alternatively, with respect to step (e) in Ueda, et al., which the Examiner is relying upon for the instant rejection, the step (e) is carried out along with steps (a), (b), and (d) to produce a four component polymer product (i.e., a polymer product containing a propylene (co)polymer obtained from step (a); a propylene/olefin copolymer obtained from step (b); an ethylene/olefin copolymer obtained from step (d); and an ethylene/olefin copolymer obtained from step (e)). Accordingly, Applicant respectfully believes Ueda, et al. does not anticipate new claims 16-19.

In light of the above, Applicant respectfully believes claims 1, 2, 4, 8, 10-12, 14, and 15-19 are not anticipated by Ueda, et al. As such, Applicant respectfully requests the Examiner to withdraw the current rejection.

2. Rejection of Claims 1, 2, 4, 5, 7, 8, 10-12, 14, and 15 Under  
35 U.S.C. §103(a) to Ueda, et al.

Applicant respectfully traverses the rejection of claims 1, 2, 4, 5, 7, 8, 10-12, 14, and 15 under 35 U.S.C. §103(a) to Ueda, et al.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

All arguments *supra* regarding Ueda, et al. are incorporated herein by reference in their entirety.

As discussed above, Ueda, et al. discloses in step (e) an ethylene/olefin copolymer is produced, with the ethylene/olefin

copolymer containing an ethylene range preferably from 90 to 98 mol%, which correlates to an upper-range of 97% by weight (i.e., 98 mol% of ethylene equals 97% by weight of ethylene). However, Applicant is currently claiming a process for preparing a propylene polymer composition in an at least two-stage process, and a propylene polymer composition obtained in an at least two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give an ethylene/propylene copolymer comprising more than 97% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min. in accordance with ISO 1133 at 230°C and 2.16 kg. Accordingly, Applicant's currently and specifically claimed ethylene range of more than 97% to 99.5% by weight is clearly outside the range preferably disclosed in Ueda, et al.

Notwithstanding, Applicant has unexpectedly found that when the ethylene content of the ethylene/propylene copolymer formed in the second stage ranges from the specifically claimed range of more than 97% to 99.5% by weight of ethylene, the resultant propylene polymers unexpectedly comprise good low-temperature toughness and stiffness. See page 3, lines 5-12, and the Examples in Applicant's

specification. In fact, Applicant respectfully believes nowhere in Ueda, et al. is Applicant's currently and specifically claimed ethylene content range disclosed, taught, or suggested. However, this is the Examiner's initial burden to establish a *prima facie* case of obviousness. See MPEP §2142.

Additionally, Applicant respectfully believes one of ordinary skill in the art would not have been motivated to modify Ueda, et al. to arrive at Applicant's currently and specifically claimed ethylene content range for the ethylene/propylene copolymer (i.e., more than 97% to 99.5% by weight). However, as outlined above, this is the Examiner's initial burden to establish a *prima facie* case of obviousness. See MPEP §2142.

With respect to new claims 16-19, as outlined *supra*, the process and propylene polymer composition consist essentially of either the propylene homopolymer prepared in the first polymerization stage and the ethylene/propylene copolymer comprising 95% to 99.5% by weight of ethylene prepared in the second polymerization stage, or the process and propylene polymer composition consist essentially of the propylene homopolymer prepared in the first polymerization stage, the ethylene/propylene copolymer comprising 95% to 99.5% by weight of ethylene prepared in the second polymerization stage, and the ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer comprising a crystallinity lower than the ethylene/propylene copolymer formed in the second polymerization



stage.

Alternatively, with respect to step (e) in Ueda, et al., which the Examiner is relying upon for the instant rejection, step (e) is carried out along with steps (a), (b), and (d) to produce a four component polymer product (i.e., a polymer product containing a propylene (co)polymer obtained from step (a); a propylene/olefin copolymer obtained from step (b); an ethylene/olefin copolymer obtained from step (d); and an ethylene/olefin copolymer obtained from step (e)). Additionally, Ueda, et al. discloses in [0149],

If the content of the propylene/olefin copolymer (b) is less than 5 % by weight, impact resistance may be reduced, whereas if this content is more than 75 % by weight, heat resistance may be reduced.

Accordingly, Ueda, et al. clearly elucidates the importance of the propylene/olefin copolymer (b) in the resultant polymer compositions. Accordingly, Applicant respectfully believes one of ordinary skill in the art would not remove the critical propylene/olefin copolymer (b) from the resultant polymer compositions. See MPEP §2141.02 (VI) and §2143.01 (V) and (VI).

In light of the above, Applicant respectfully believes claims 1, 2, 4, 5, 8, 10-12, 14, and 15-19 are patentable over Ueda, et al. As such, Applicant respectfully requests the Examiner to withdraw the current rejection.

3. Rejection of Claims 1, 2, and 10-12 Under 35 U.S.C. §102(b) to

EP 0 792 914

Applicant respectfully traverses the rejection of claims 1, 2, and 10-12 under 35 U.S.C. §102(b) to EP 0 792 914 (herein referred to as, "Matsunaga, et al.")).

As outlined *supra*, for a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Arguments *supra* regarding Ueda, et al. are incorporated herein by reference in their entirety.

With respect to the instant rejection, the current Office Action states on page 4, line 8-13,

With respect to the rejection of claims 1, 2 and 10-12 under 35 U.S.C. 102(b) as being anticipated by Matsunaga et al. (EP 0 792 914), applicants, again, choose to omit teachings of the reference. Again, it is point out the production of the propylene homopolymer at paragraph [0022] as the first polymerization step, followed by the ethylene copolymer at paragraph [0056] with ethylene present at 95 mol%, as herein claimed. The reference is

taken for the entirety of its teachings.

As noted above by the Examiner, Matsunaga, et al. discloses the ethylene/ $\alpha$ -olefin copolymer contains 70 to 95 mol%, preferably 80 to 92 mol% of ethylene. However, Applicant is currently claiming a process for preparing a propylene polymer composition in an at least two-stage process, and a propylene polymer composition obtained in an at least two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give an ethylene/propylene copolymer comprising more than 97% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min. in accordance with ISO 1133 at 230°C and 2.16 kg. Therefore, since the ethylene content of 95 mol% disclosed for the ethylene/ $\alpha$ -olefin copolymer in Matsunaga, et al. is clearly less than the currently claimed ethylene weight percent for the ethylene/propylene copolymer (i.e., more than 97% by weight), Applicant respectfully believes for this reason alone the instant rejection should be withdrawn.

Notwithstanding, Matsunaga, et al. clearly discloses the ethylene/ $\alpha$ -olefin copolymer consists of 70 to 95 mol%, preferably, 80 to 92 mol% of units derived from ethylene, and 30 to 5 mol%, preferably, 20 to 8 mol% of units derived from an  $\alpha$ -olefin having 4

to 12 carbon atoms. Accordingly, clearly Matsunaga, et al. does not disclose, teach, or suggest Applicant's currently claimed ethylene/propylene copolymer comprising more than 97% to 99.5% by weight of ethylene.

With respect to new claims 16-19, as outlined *supra*, Applicant is currently claiming a process for preparing a propylene polymer composition in a two-stage process, and a propylene polymer composition obtained in a two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give an ethylene/propylene copolymer comprising from 95% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min. in accordance with ISO 1133 at 230°C and 2.16 kg, and the propylene polymer composition consists essentially of the propylene homopolymer and the ethylene/propylene copolymer.

Additionally, Applicant is currently claiming a polymer composition and a process for preparing the polymer composition comprising: (1) preparing a propylene polymer composition in a two-stage process, wherein, in a first polymerization stage, a propylene homopolymer is prepared by polymerization, and in a second polymerization stage, ethylene and propylene are polymerized to give

an ethylene/propylene copolymer comprising from 95% to 99.5% by weight of ethylene, wherein the amount of the ethylene/propylene copolymer in the propylene polymer composition ranges from 10 to 50% by weight, and the propylene polymer composition comprises a melt flow rate, MFR, from 2 to 50 g/10 min. in accordance with ISO 1133 at 230°C and 2.16 kg; and

(2) subsequently mixing an ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer comprising a crystallinity lower than the ethylene/propylene copolymer formed in the second polymerization stage, wherein the polymer composition consists essentially of the propylene homopolymer, the ethylene/propylene copolymer, and the ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer.

As outlined above, in both circumstances the process and propylene polymer composition consist essentially of either the propylene homopolymer prepared in the first polymerization stage and the ethylene/propylene copolymer comprising 95% to 99.5% by weight of ethylene prepared in the second polymerization stage, or the process and propylene polymer composition consist essentially of the propylene homopolymer prepared in the first polymerization stage, the ethylene/propylene copolymer comprising 95% to 99.5% by weight of ethylene prepared in the second polymerization stage, and the ethylene-C<sub>3</sub>-C<sub>10</sub>-1-alkene copolymer comprising a crystallinity lower than the ethylene/propylene copolymer formed in the second polymerization stage.

Alternatively, Matsunaga, et al. discloses a polyolefin composition consisting of various possible components, including propylene polymer (A), propylene block copolymer (A'), propylene block copolymer (A''), propylene polymer (A'''), the aforementioned ethylene/C<sub>4</sub>-C<sub>12</sub>  $\alpha$ -olefin copolymer (B), and a propylene/C<sub>4</sub>-C<sub>12</sub>  $\alpha$ -olefin/ethylene terpolymer (C). Accordingly, given the clear difference in components, Applicant respectfully believes not only does Matsunaga, et al. not anticipate Applicant's currently claimed compositions, but Applicant also believes that one skilled in the art would not have been motivated to modify the individual components of Matsunaga, et al. to try and arrive at Applicant's currently claimed compositions.

In light of the above, Applicant respectfully believes claims 1, 2, 4, 5, 8, 10-12, 14, and 15-19 are not anticipated, and are patentably distinct from Matsunaga, et al. As such, Applicant respectfully requests the Examiner to withdraw the current rejection.

#### CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw the currently pending rejection, and allow claims 1, 2, 4, 5, 8, 10-12, and 14-19.

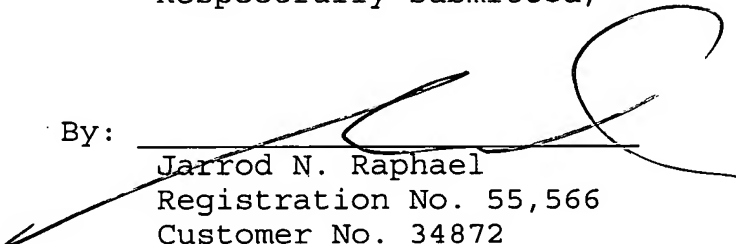
U.S. Patent Application  
Serial No. 10/522,082

Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

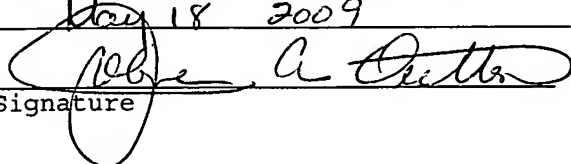
In order to advance the prosecution of the instant application, the Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

Respectfully submitted,

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